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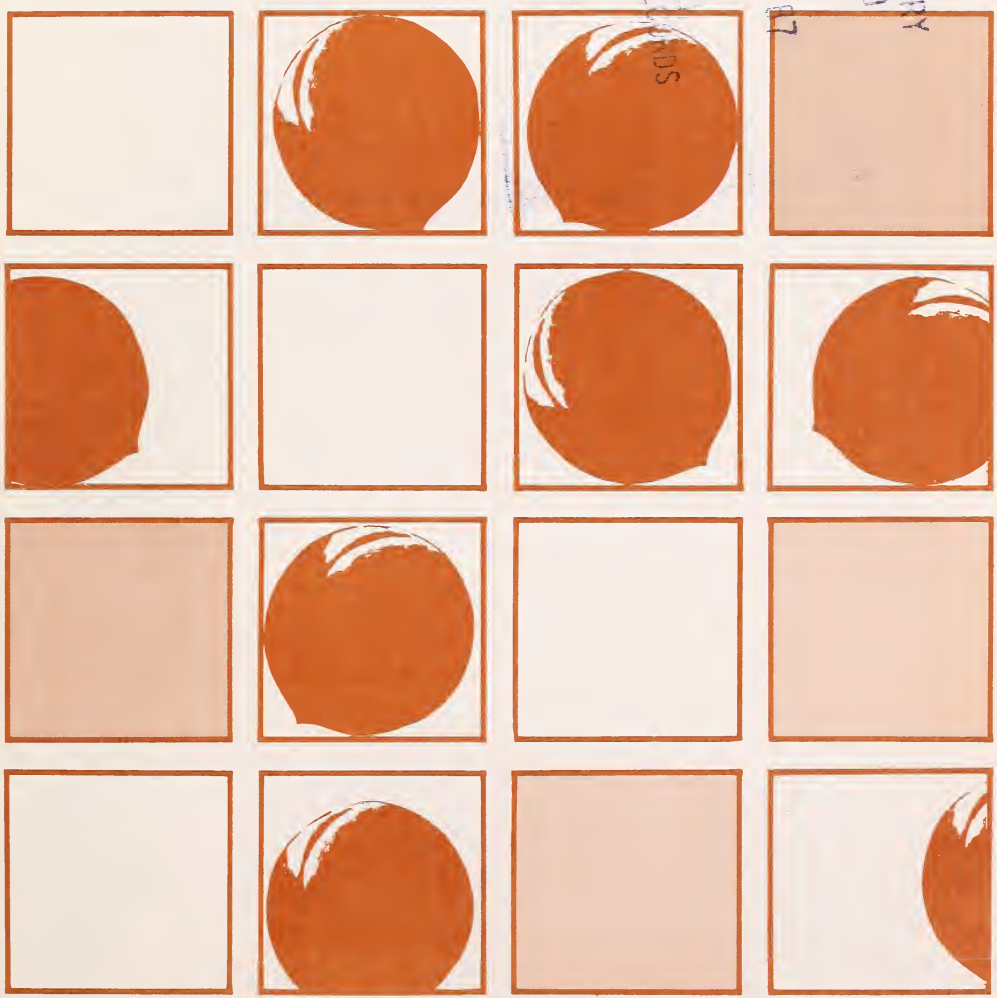


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How Fresh Peaches are Marketed

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Washington, D.C. August 1978

How Fresh Peaches are Marketed

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INTRODUCTION

Peaches originated in China several thousand years ago and were later introduced in Southern Europe. Peach trees are now grown in many areas of the world with temperate climates.

Most of the world's peach production comes from Europe and North America. Europe produces about one-half of the world's peaches, and North America about one-fourth. The United States is the world's leading producer, followed by Italy and France. More than one-half of the world's peaches are produced in these three countries. Other significant producers are South Africa, Argentina, Japan, Turkey, Greece, Spain, and Australia.

Early colonists introduced peach trees in Florida and later northward along the Atlantic Coast. Settlers took seeds and seedlings with them as they moved west. By the early 1800's peaches were grown throughout much of the East. Most farms had at least a few trees for home and local use.

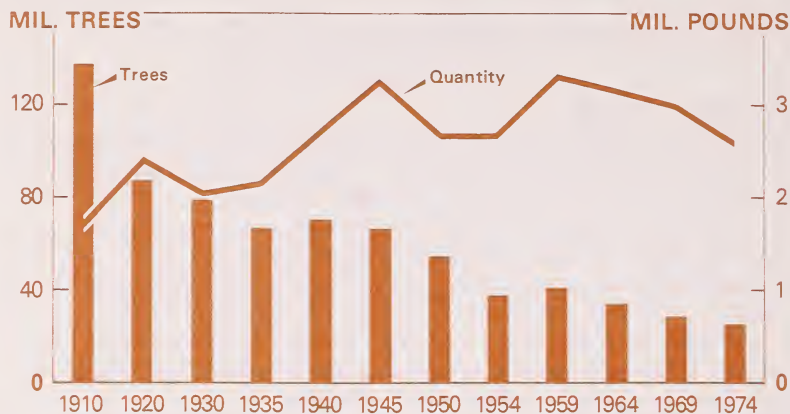
During the early 1800's commercial production increased rapidly. As a result, problems with diseases and insects increased. Brown rot diseases, the virus, Peach Yellows, and borer insects caused particular problems.

Peach Yellows destroyed many trees in the East and Midwest, but did not damage trees in the Southeast, and the industry there continued to develop. San Jose scale, introduced into Virginia about 1900, rapidly spread to other fruit growing areas. Spraying became a regular practice to control it.

U.S. peach production has generally increased since about 1910, even though the number of trees has declined considerably (fig. 1). According to census data, there were about 24.5 million peach trees on 250,000 acres in the country in 1974, compared with more than 136 million trees in 1910.

Peaches are now grown over a wide area of the country, with significant production in many States. Among noncitrus fruits, peaches rank third in volume—ahead of pears but behind grapes and apples (Table 1).

UNITED STATES PEACHES TREE POPULATION AND QUANTITY HARVESTED^o



^o1969 AND 1974 DATA ONLY FOR CLASS 1-5 FARMS.

NOTE: VARIATIONS IN INTERVALS BETWEEN YEARS REFLECTS THE AVAILABILITY OF SOURCE DATA.

SOURCE: U.S. CENSUS OF AGRICULTURE.

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Figure 1

Table 1—U.S. noncitrus fruit, production 1975-77

Crop	Utilized production ¹		
	1975	1976	1977
	<i>Million pounds</i>		
Grapes.....	8,730	8,184	8,496
Apples.....	7,102	6,414	6,702
Peaches ²	2,810	2,796	2,976
Pears.....	1,486	1,658	1,572
Prunes and plums.....	1,304	1,280	1,434
Total noncitrus fruits.....	23,110	22,252	22,848

¹Fresh equivalent

²Includes culls and cannery diversions for California clingstone peaches.

Source: Economics, Statistics, and Cooperatives Service, USDA

Table 2—Peaches: total production by States and percentage of total, 1975-77 average.

State	Average production 1975-77	Percentage of total
	<i>Million pounds</i>	<i>Percent</i>
California (clingstone) ¹	1,485	50.4
California (freestone)	447	15.2
South Carolina	252	8.5
Georgia	128	4.3
New Jersey	95	3.2
Pennsylvania	92	3.1
Michigan	53	1.8
Washington	45	1.5
Arkansas	39	1.3
North Carolina	30	1.0
Texas	27	0.9
Virginia	22	0.7
Maryland	21	0.7
West Virginia	19	0.7
Missouri	19	0.6
Illinois	19	0.6
Utah	17	0.6
Colorado	16	0.5
Oregon	15	0.5
Ohio	18	0.5
New York	13	0.4
Idaho	12	0.4
Alabama	10	0.4
Kentucky	9	0.3
Oklahoma	8	0.3
Tennessee	8	0.3
Kansas	8	0.3
Indiana	5	0.2
Louisiana	5	0.2
Connecticut	5	0.2
Mississippi	4	0.1
Massachusetts	4	0.1
Delaware	2	0.1
United States	2,950	100.0

Note: Data do not add to totals due to rounding.

¹Utilized mostly in processing.

Source: Economics, Statistics, and Cooperatives Service, USDA

GROWING AREAS AND VARIETIES

Commercial peach plantings occur in more than three-fourths of the States, including most Midwestern, Eastern, and Southern States and several Western States (Table 2). Most peaches for commercial use are grown in orchards which range in size from a few acres to 100 acres or more. Small plantings occur in some part of the country, primarily for home use.

Hundreds of varieties of peaches are grown in this country; most, though, produce well only in a particular area. Exceptions are Elberta, Red Haven, and Rio-Oso-Gem, which do well in different areas.

Many new varieties of peaches have been developed over the past 30 years, and are continually replacing older varieties in many areas. Development of new varieties has been more rapid than for most other fruits because peach trees in most parts of the country have a rather short life span, and there is a demand for new and improved varieties. It also takes a relatively short time to develop varieties and introduce them.

The shipping season has been lengthened because fruit of different varieties ripen at different times of the season. Many of the recently developed varieties are more resistant to disease and cold injury than the old varieties. They also produce higher yields and a higher quality fruit.

The Central Valley of California accounts for more than two-thirds of the nation's peaches, including almost all clingstones and about one-third of the freestones. About 130 varieties of freestones and semiclings are produced there. Fresh shipments occur from May through September. The peaches are shipped fresh to markets throughout the United States, with heaviest shipments to markets west of the Mississippi. About 95 percent of California's fresh peaches are shipped by truck, with most of the balance by rail. Most are shipped in 2-layer tray pack lugs. Substantial shipments also are made in standard fruit boxes. Small amounts are shipped in volume-filled lugflats and bins. Use of the 35-pound loose filled carton has increased in recent years. Several varieties of clingstones are produced in California primarily for processing. Clingstone production has remained relatively stable over recent years, even though acreage has declined. In 1976, clingstones were raised on about 60,000 acres in California. They are used primarily for canning—either as slices or halves or diced in fruit cocktail. They are usually packed in heavy syrup. They are canned in a number of different sizes and types of containers for both retail and institutional markets.

About one-fifth of the nation's peaches are produced in the Southeast, primarily central Georgia and the Carolinas. More than

50 varieties are grown in this area. Popular varieties are Blake, Coronet, Dixieland, Loring, Red Globe, June Gold, May Gold, Suwanee, Southland, Dixired, Red Haven, Washington, Jefferson and Rio-Oso-Gem. Production is quite variable because of inconsistent weather patterns. About 90 percent of the crop is shipped fresh and 10 percent processed (canned and frozen), although the amount processed varies with the size of the crop. In years of large production when fresh peach prices are likely to be lower, more of the crop is diverted to processing.

Most peaches produced in the Southeast are marketed in the eastern, midwestern and southeastern United States and in eastern Canada. The peaches are harvested from May through August, with shipments peaking in July. Most commercial shipments are in $\frac{3}{4}$ -bushel fiberboard cartons and wirebound crates. A few $\frac{1}{2}$ -bushel cartons and crates and 38-, 32-, and 20-pound cartons are also used. Most shipments are by truck.

The east side of the Appalachian Mountains in Maryland, Pennsylvania, Virginia, and West Virginia is another important peach-producing area (fig. 2). Major varieties produced in this area include Red Haven, Red Skin, Elberta, Red Globe, Loring, and Blake. Fresh peaches are shipped in August and the first half of September, primarily to eastern markets, with a few to the Midwest and South. The $\frac{3}{4}$ -bushel fiberboard carton is commonly used but $\frac{3}{4}$ -bushel crates and 3- or 4-layer cartons are also used. Shipments to local markets are often in returnable field boxes or in $\frac{1}{4}$ -bushel hampers. Most are shipped by truck.



Figure 2. Contoured peach orchard in Pennsylvania.

New Jersey's peach production and plantings have increased in recent years. Production in the State has generally shifted south as a result of urbanization. New Jersey has produced peaches since the early 1600's, and a peach-breeding program was initiated as early as 1907. Since that time about 75 new varieties have been developed and introduced. Major ones are Red Haven, Washington, Triogem, Sun High, Loring, Blake, Jersey Queen, and Rio-Oso-Gem.

New Jersey markets most of its fresh peaches from July through September, with heaviest shipments in August and the first 3 weeks of September. Most are marketed fresh in the East, but the Midwest and east Canadian markets are also important. Commercial shipments are mostly in $\frac{3}{4}$ -bushel wirebound crates or in field boxes. Shipments to nearby markets are often in field boxes, which are usually returned to the shipper for reuse. Most are shipped by truck.

Areas near the eastern and southern shores of the Great Lakes in New York, Ohio, and Michigan are also suitable for peach production because the lakes moderate winter and spring temperatures. Major varieties grown for the fresh market in Michigan are Sun Haven, Red Haven, Kalhaven, Glo Haven, Redskin, and Elberta. Red Haven is the most important.

The bulk of Michigan's shipments are to midwestern markets in August and the first part of September. Most shipments are in $\frac{3}{4}$ -bushel crates, with a few in cartons. Peaches sold in local markets are usually in unlidded $\frac{1}{2}$ -bushel baskets, with a few in $\frac{3}{4}$ -bushel crates and in bushel baskets. Most are shipped by truck.

Much of Colorado's crop is shipped fresh to markets in the State and midwestern states, with the rest sold mostly in local markets such as roadside stands. Colorado peaches are normally harvested from mid-July through mid-September, with shipments peaking about the last week of August. The standard Elberta variety comprises about 70 percent of the crop. About one-half of the crop is shipped in Western Peach Boxes, about one-fourth in $\frac{3}{4}$ -bushel crates, and the balance in miscellaneous containers. Most are shipped to market by truck, with a few shipments by rail.

Peach production in central Washington is important to the Pacific Northwest, where about 75 percent of the crop is marketed. The major variety produced is J.H. Hale, which represents about 60 percent of production. Elberta and related varieties now make up about 20 percent of the total as do Red Haven and similar varieties. The peaches are harvested from July through the first part of September. About one-half are marketed in wooden or fiberboard tray pack standard peach boxes, about a quarter in 26-pound "Western lugs," and the rest in small peach boxes or miscellaneous

containers. About 20 to 25 percent of the crop is canned. During the 1950–74 period, peach acreage in Washington declined, due to the removal of Elberta varieties grown primarily for canning.

Scattered commercial peach production occurs over a wide area in the south central part of the country from southern Illinois to Louisiana. Other States in this area with significant production are Arkansas, Ohio, Indiana, Missouri, Kentucky, Tennessee, Alabama, Mississippi, Oklahoma, and Texas. Peaches produced in this area are generally marketed from June through August, mostly in local and regional markets.

HARVESTING

Maturity

The ideal time to harvest peaches is when they are beginning their ripening process, but are still firm. At this stage they withstand picking, hauling, and packing operations quite well and will complete the ripening process in a few days at room temperature. If picked too soon, potential tonnage is lost because peaches grow considerably just before reaching maturity. Immature peaches tend to shrivel and have a sour flavor. However, if the harvest is delayed too long, they begin to soften, bruise easily, and lack shelf life.

Pickers generally use color to determine which peaches are ripe. As peaches mature, the ground color of the fruit surface changes from green to yellow.

Firmness is another indication of maturity. Fruit which is well matured will yield very slightly to moderate pressure at the suture of the blossom end of the fruit.

Pressure test devices are also used to determine maturity. A disadvantage of this method is that it destroys the fruit.

Tools

Pickers need proper equipment to work efficiently. Several different types of picking containers are used. One commonly used is the canvas bag type which straps over the picker's shoulders leaving the hands free to pick and hold on to the ladder. The bottom of this container can be opened and the peaches gently lowered into field containers or pallet boxes. Since canvas is not rigid, less bruising occurs than when metal containers are used.

Another type is the drop-bottom picking bucket, which also straps over the shoulders. This container consists of a metal tube with a canvas bottom which also can be opened easily. Metal picking buckets are used to some extent in some areas.

Equipment

Pallet boxes are widely used as field containers to transport fruit from orchard to packinghouse. They have a capacity of about 20 bushels, but are usually not filled to the top to allow stacking. These boxes are usually constructed of a durable material, like plywood, and are designed so they can be moved by forklift tractor. During harvest, orchard trailers, which move pallet boxes to the harvest site, are slowly pulled between rows of trees following pickers. When the boxes are filled, they are moved directly to the packinghouse trailer.

Another field container has a capacity of about one bushel. It is constructed of heavy wood and designed so many can be stacked on orchard trailers, trucks, or pallets. These containers can be scattered around the orchard at convenient locations so pickers will not have to walk far to fill them. They are small however, so many are needed, and considerable manual labor is required to scatter them about the orchard and place them on orchard trailers or trucks when filled. Sometimes they are palletized on orchard trailers or trucks for convenience in loading and unloading.

Methods

Peaches for fresh use are primarily picked by hand, while mechanical harvesters are used to some extent to harvest clingstones for processing. Peaches are very tender and must be picked with a great deal of care. They bruise easily if squeezed or dropped and deteriorate rapidly. Bruised peaches are of little value for fresh market. Pickers, especially those with little experience, require substantial supervision.

PREPARING PEACHES FOR FRESH MARKET

The Packinghouse Operation

Most peaches sold in major commercial markets are packed in packinghouses, where they are cooled, cleaned, defuzzed, sorted according to grade and size, placed in containers, and loaded for shipment to market (fig. 3). Modern packinghouses utilize a considerable amount of laborsaving machinery. Some machines dump, wash, defuzz, and size the fruit; others aid the packer in placing the peaches in boxes. Forklift tractors are commonly used in larger packinghouses to move pallet boxes and containers stacked on pallets. Hand sorting remains the principal means of removing defective fruit.

Unloading

As soon as peaches are harvested, they should be brought to the packinghouse, unloaded, and cooled as quickly as possible. Peaches exposed to summer temperatures, especially if left in the sun, mature rapidly, soften, lose moisture and sugar, and are quite susceptible to decay. Forklift tractors are a fast, efficient method of loading, unloading, and moving peaches around the packinghouse.

Cooling

Peaches which are held at a cool temperature have a longer shelf life than uncooled peaches. They are also less susceptible to decay, remain firmer, and retain their flavor longer. Peaches are often cooled as soon as they are brought to the packinghouse from the orchard. In some packinghouses peaches are hydrocooled (with the water as near 32° F. (0° C.) as possible) in field containers as soon as they are brought from the orchard. In others, they are hydrocooled during early stages of the packing operation—which is a satisfactory method if the peaches are packed soon after arrival from the orchard. An advantage of this latter method is that it is part of the washing operation, and the peaches are cooled immediately before packing. Occasionally, peaches are hydrocooled after packing, but they must be in water-resistant containers.

Hydrocoolers use either ice or mechanical refrigeration. Some types submerge the peaches in water while others drench them with sprinklers. Forced-air cooling is also used but it cools more slowly than hydrocooling, with more moisture loss.

FLOW DIAGRAM OF PACKINGHOUSE OPERATION

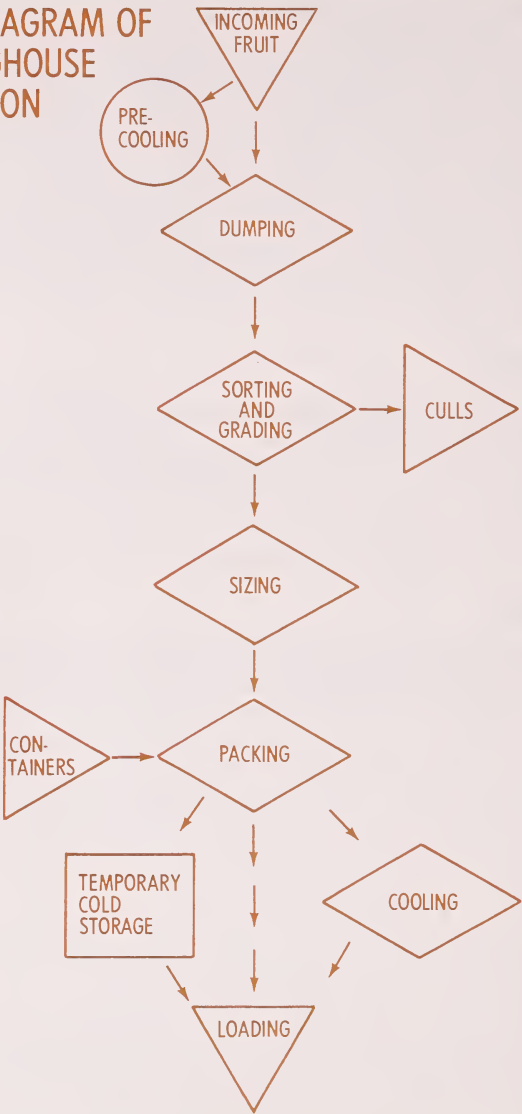


Figure 3

Cold Storage

A typical cooler consists of a large room with forced-air mechanical refrigeration. Peaches are placed in cold storage soon after arriving from the orchard, usually following hydrocooling. Forklift tractors or pallet jacks are used to move fruit from the unloading area to the hydrocoolers and to cold storage. Peaches removed from cold storage for packing are returned there as soon as they are packed, then held there until loaded for shipment to market.

If peaches are mature but firm when placed in cold storage, they can be stored from 10 days to 2 weeks at 40°F. (4°C.), or from 2 to 3 weeks at 32°F. (0°C.). Since peaches must be harvested as soon as they ripen, cold storage facilities give the packinghouse manager more flexibility in packing and marketing them. For example, if peaches are picked faster than they can be packed, they can be held in storage until there is time to pack them. If prices were weak, the peaches could be kept in storage until the market improves.

Washing, Defuzzing, and Waxing

Peaches are washed, defuzzed, and waxed before packing. Packing begins with the boxes of peaches being brought from storage rooms or unloading areas to a water tank at the end of the packing line. Machines are used to empty the boxes. Two types of machines are used—one tilts the box while the fruit rolls into the water and the other submerges the box and the fruit floats in the tank. The peaches are gently removed from the tank with a chain link belt, scrubbed with rotating brushes to remove the fuzz, and washed and rinsed with fresh water. Wax is often sprayed on the peaches after rinsing to reduce moisture loss.

Sorting and classifying

Peaches are sorted according to size and quality before shipment to market. The first sorting segregates the very small peaches, just after they are removed from the dump tank. This is done with a device known as a “presizer,” which separates the very small fruit from the rest. After the peaches have been washed, defuzzed, and waxed, they are run through a sizing machine. Two types of sizers are used—weight sizers and diameter sizers; the latter is more commonly used. In the diameter sizer, the peaches roll down rubber ropes, which diverge slightly to allow the fruit to drop into various size categories. Typically, peaches for commercial shipment are



Figure 4. Defective peaches being removed from the sorting belt by a packinghouse worker before packaging and shipping to market.

separated into two to six size categories, with a diameter range of $\frac{1}{8}$ inch common for a particular size. Some minimum sizes commonly set are 2, $2\frac{1}{8}$, $2\frac{1}{4}$, $2\frac{3}{8}$, $2\frac{1}{2}$, and $2\frac{5}{8}$ inches.

Peaches are usually sorted according to quality and grade. In grading, defective and poor quality fruit is removed by hand as it moves along a conveyor belt (fig. 4). The remaining fruit is sent to the packing area. Most commercial fresh shipments are required to meet certain minimum grade and size requirements. Those failing are usually sent to be processed. Many packers grade and pack their peaches according to standards developed by the U.S. Department of Agriculture.

Packaging

Peaches for the fresh commercial markets are usually placed in new containers for shipment. Cartons, crates, lugs, or boxes are commonly used. In the eastern part of the country, cartons and



Figure 5. Peaches being individually wrapped and packed in shipping containers by packinghouse workers.

crates are widely used. In the West, lugs or boxes are more prevalent. In some areas shipments to nearby markets are in used containers, field boxes, baskets, or pallet boxes. Field containers are usually returned to the packinghouse after the fruit is sold to help reduce packaging costs. If the peaches are packed in tray pack lugs or wrapped, they are placed in the container by hand (fig. 5). Semiautomatic box fillers are used to fill cartons or crates.

After containers are filled, they are lidded. For telescoping fiberboard cartons, the lid is slipped over. For wooden lugs or boxes, the lid is nailed on. The lid, which is attached to the crate, is folded down and wired to the container. After containers are filled and lidded, they are stacked on pallets. The pallets are then moved to cold storage areas or directly to waiting railcars or trucks by pallet jacks or forklift tractors.

Loading and Shipping

Shipments to larger commercial markets are in large refrigerated truck vans or railcars, while shipments to local markets are often in smaller trucks. Air freight is sometimes used to ship peaches to market early in the season when tight supplies and high prices make it advantageous for the shipper to get the fruit to market before supplies increase. Most peaches are transported to market by trucks. In the East almost all peaches are moved by trucks while in the West about 90 percent of the shipments are by truck and most of the remainder by rail.

Forklift tractors or pallet jacks are used to move peaches from cold storage or the packing line to the trucks or railcars.

Containers of peaches are either removed from the pallets and stacked in the van or railcar, or strapped to the pallet and the entire unit loaded. This latter method, commonly known as "palletization," is becoming more widely used because the conveyance may be loaded and unloaded with forklift tractors or pallet jacks.

MARKETING AND UTILIZATION

Marketing Organizations

Two principal types of organizations prepare peaches for market and sell them—independently owned firms and growers' cooperatives. In the East most peaches are packed and marketed by independent firms, while in the western States they are packed and marketed by both types. West Virginia has an unusual system where a nonprofit corporation packs, stores, and sells peaches and apples for producers.

Selling Methods

The first sale of peaches typically takes place either at shipping point or terminal market. When the sale takes place at a shipping point, it is by the packer-shipper directly to a chain store or wholesale buyer in a terminal market. Wholesale buyers in turn resell the peaches to retail store buyers or institutional buyers. The packer-shipper sometimes delivers the fruit to a commission merchant, who sells the fruit for a commission. Some sales are arranged by brokers who act as intermediaries between sellers and buyers and collect a brokerage fee from either the seller or the buyer. Producers close to terminal markets sometimes sell their fruit directly to wholesale buyers.

Some peaches are sold at auctions in major terminal markets. Produce buyers bid on a particular lot of fruit, and the highest bidder gets the fruit. Auctions have been declining over the past several years as more sales are made at shipping points.

Small amounts of peaches are sold directly to the consumer at roadside stands or by sidewalk vendors. Sometimes producers market some of their crop along the roads near their orchards. Some roadside stand operators buy their peaches directly from the producer or from the packinghouse manager. Street vendors often buy their peaches from wholesale markets in the cities where they operate.

A minor but increasingly popular way of selling peaches is the "pick your own" or "U-pick" method. The buyer picks his own fruit at the producer's orchard. Consumers find this method to their liking because they can usually buy the fruit for less than at other retail outlets, and they can select their own fruit. The orchard owner finds this method attractive because he does not have to spend time or money picking and packing his fruit. Orchard managers furnish picking equipment and have containers available for sale.

Shipping period

Fresh peaches grown in the U.S. are normally marketed over a 5- to 6-month period from late spring to early fall. Shipments begin with light movement from Florida in April and end with shipments from the northern States in October. The heaviest movement occurs during the period from June through August (fig. 6).

Utilization

In 1977, about 2.9 billion pounds of peaches were used in the United States; the all-use price averaged 9.9 cents per pound to producers who received over \$282 million for the crop (Table 3). Peach prices increased during the 1971-1975 period, but declined in 1976, while production generally increased (fig. 7).

Peaches are marketed either as fresh fruit or as processed products. Most fresh fruit is sold in retail stores, but sizable amounts are bought by institutions, such as schools, restaurants, and the military. Some fresh peaches are also sold by street vendors and roadside stand operators. Most peaches for processing are canned, including a significant amount in fruit cocktail. Minor amounts are processed as pickles, wine, and brandy. A very small part of the crop is frozen or dried.

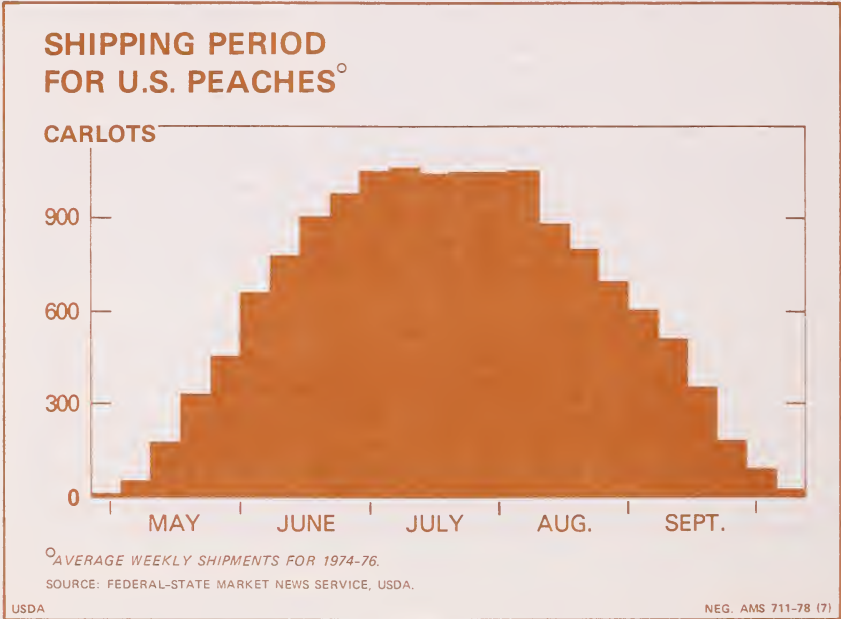


Figure 6

During recent years the nation's peach crop has been utilized as follows: fresh market sales—about 44 percent; canned products—about 51 percent; and frozen, dried, and other—about 5 percent. Most fresh peaches are consumed within the United States, with small amounts exported to Canada. While most processed peaches are also consumed in the United States, export markets are important, primarily those in the European community and Canada.

Annual per capital consumption of peaches in the United States has declined about one-third over the past 19 years from 17.1 pounds in 1958 to 10.8 in 1976. Fresh peach use has declined considerably—down about one-half, while the decline for canned peaches has been less, down about one-fifth. Dried peaches have also declined considerably, but frozen peach use has increased slightly (fig. 8.)

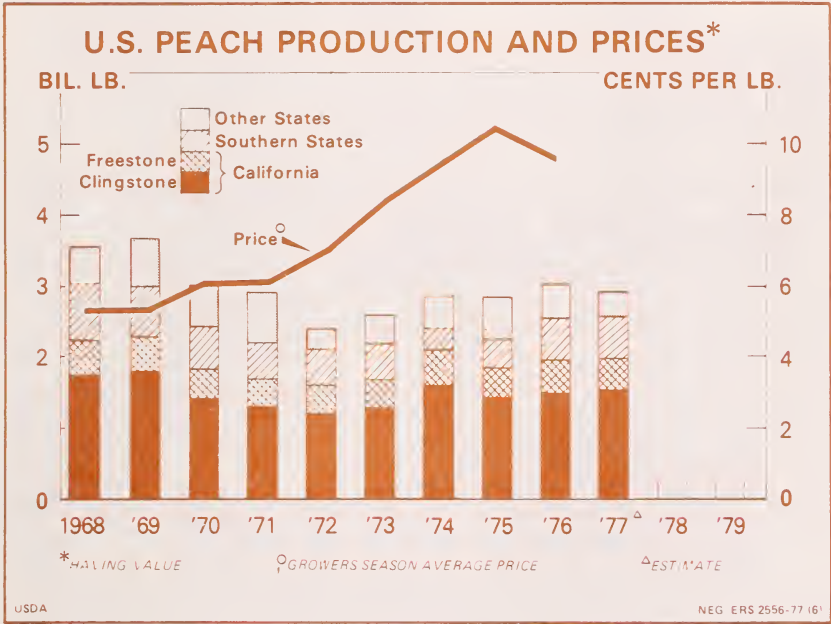


Figure 7

Table 3—U.S. peaches: production, prices, and values, 1959-77

Year	Utilized production	Price per pound	Value of utilized production
	— <i>Million Pounds</i> —	— <i>Cents</i> —	— <i>Million Dollars</i> —
1959	3,448.4	3.97	\$134.1
1960	3,457.9	3.84	130.3
1961	3,562.4	3.95	138.1
1962	3,387.0	3.87	129.2
1963	3,418.1	4.35	146.6
1964	3,276.3	4.60	150.7
1965	3,152.3	4.42	139.3
1966	3,194.4	5.13	163.8
1967	2,525.3	6.26	158.0
1968	3,395.4	5.29	179.7
1969	3,410.0	5.23	178.2
1970	2,786.3	6.04	168.3
1971	2,742.3	6.07	166.6
1972	2,249.5	6.90	155.3
1973	2,412.7	8.3	199.1
1974	2,756.3	9.5	260.7
1975	2,648.9	10.4	275.6
1976	2,642.4	9.6	254.2
1977	2,860.2	9.9	282.2

¹Prices received by producers at the first point of sale. Value of home use excluded for 1959-63 period.

Source: Economics, Statistics, and Cooperatives Service, USDA

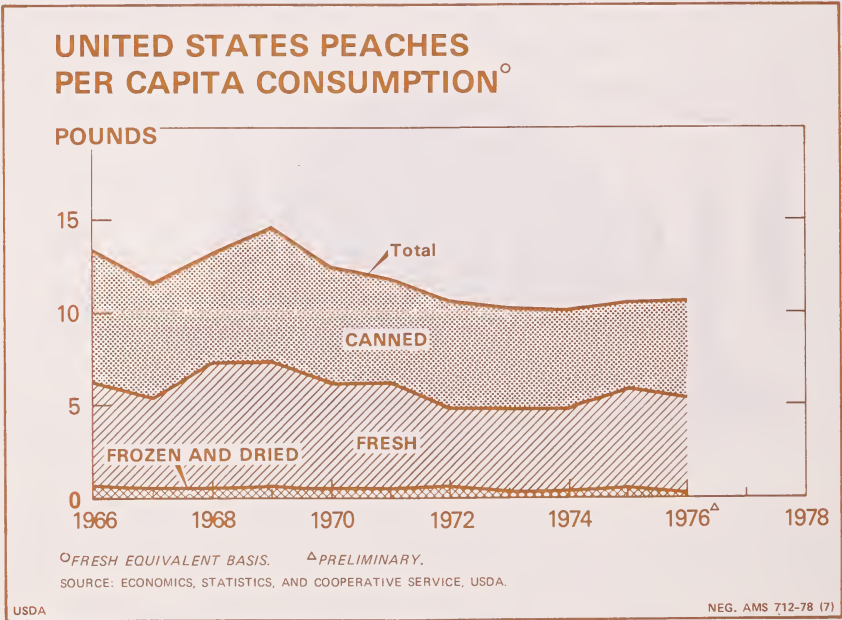


Figure 8

GOVERNMENT SERVICES

Marketing Agreements and Orders

Peaches grown in California, Colorado, Georgia and Washington are marketed under marketing order programs. Under these programs the Secretary of Agriculture may prescribe grade and size requirements for peaches in fresh shipments, usually upon recommendation of an administrative committee which works with the program locally. These requirements have helped the industries in these four States to maintain the quality of peaches shipped to market, thereby assuring consumers of desirable fruit. USDA marketing specialists are available to assist producers in considering if a marketing order program would aid their area.

Some areas also have State marketing programs for peaches. South Carolina, for example, has a marketing order which authorizes market development, promotion, and research for peaches. California's program permits advertising, promotion, and research on clingstone peaches for processing.

Inspection and Certification

Standards for peaches for fresh use and for processing have been developed by USDA. For fresh peaches, the standards define four grades: U.S. Fancy, U.S. Extra No. 1, U.S. No. 1, and U.S. No. 2; and include certain size and pack specifications. For processed peaches there are four standards: One each for canned, frozen, dried and dehydrated fruit. For each use, the processing grades established are Grades A, B, C, and Substandard. Some States also have developed grade standards, and peaches grown in those States are often marketed under such grades.

Inspectors of the Federal or Federal-State inspection service are authorized to inspect and certify that peaches meet grade and other requirements specified in the standards (fig. 9). Inspectors are located at several shipping point locations and in terminal markets. Inspection may take place before shipment of the fruit or on its arrival in the market or sometimes at both locations. An inspection certificate is issued for each lot inspected. The certificate specifies grade, size, and pack of fruit and gives the time and location of the inspection. It serves as an official record of the size and quality of the fruit.

Although inspection is voluntary and a fee is charged for the service, buyers and sellers find it advantageous to have their products graded and certified. Grade standards serve as a common language between buyer and seller. If the buyer and seller are located far apart, the buyer does not have an opportunity to look at



Figure 9. A USDA grader determining the official grade of peaches in tray-type containers before shipment to market.

the fruit before purchase. When fruit is traded on the basis of official standards, both parties have an accurate description of the fruit involved. The inspection certificate also serves as evidence that the fruit shipped met certain minimum requirements with respect to grade, size, and pack.

Some Federal, State, and local governmental units are required by law to have their food purchases inspected and certified by the USDA's inspection service to protect the consumer's interest. Inspection is also required for shipments of peaches made under marketing order regulations.

Market News

At many locations throughout the country, prices are collected, summarized and reported by USDA. Market news reporters report the prices and shipments of fresh peaches from some shipping point locations and from terminal markets in 41 U.S. and 5 Canadian cities. They also record and report the volume of unloads of rail, truck, and air shipments in these markets and note the point of origin of the load. Prices are reported by varieties, grades, and sizes of fruit in various types of shipping containers.

Market news reports are widely disseminated on a timely basis by daily releases to the news media. Price and other information in these reports is also reported by many broadcasters and in several trade papers. Telephone recorders have been installed in some shipping point market news offices, and provide 24-hour market information by phone. Market news offices located in some parts of the country prepare annual summaries of peaches originating in California, Michigan, Washington, and the major peach-producing states east of the Appalachian Mountains.

Research

USDA has an ongoing breeding program under which improved varieties of peaches are being developed at locations around the country. The principal tree qualities concerning breeders are cold and frost hardiness, resistance to disease, vigor (amount of new terminal growth), and chilling requirements—especially in the South. Important fruit characteristics are flesh firmness, texture, color, freeness of the flesh from the pit, color around the pit, fruit color and brightness of the blush, and the amount of fuzz. Fruit quality, especially flavor, is also evaluated by the breeders.

The USDA research laboratory at Beltsville, Md., conducts research on storage techniques for different varieties of peaches in their laboratories. Peaches are stored under various temperatures to determine the effect on the ripening process and the development of market diseases. The effects of varying oxygen, carbon dioxide, and humidity levels on the fruit are tested. Various chemicals and differing heat treatments are applied to determine their effectiveness in retarding fruit decay. The USDA research laboratory in Fresno, Calif., has studied the effects of treating peaches with hot water and various chemicals to retard decay.

Cooperative Extension

USDA cooperates with State and county governments and land-grant colleges to provide producers with technical information, which is disseminated through the Cooperative Extension Service. County Agricultural Extension agents and other specialists provide producers with production and marketing information. They also supply pamphlets and circulars, and communicate with producers by telephone and personal visits. They conduct workshops to review research results with producers. And, they maintain demonstration plots, where the results of spraying, pruning, fertilizing, mechanical harvesting, and other cultural practices can be observed. The Cooperative Extension Service of Clemson University in South Carolina prepares a national peach report on a weekly basis during the season.

PEACH INFORMATION SOURCES

Organization

Administrative Committee

P.O. Box 460
Palisade, Colorado 81526

Industry Committee

P.O. Box 510
Macon, Georgia 31202

National Peach Council

P.O. Box 1085
213 W. Tennessee Avenue
Martinsburg, West Virginia
25401

Peach Commodity Committee

P.O. Box 255383
701 Fulton Avenue
Sacramento, California 95825

United Fresh Fruit and Vegetable Assoc.

1019 19th Street, N.W.
Washington, D.C. 20036

Washington Fresh Peach Marketing Committee

601 West A. Street
Yakima, Washington 98901

Agricultural Marketing Service

Denver Marketing Field Office AMS, USDA

New Customhouse, Room 365
721 19th Street
Denver, Colorado 80202

Fruit and Vegetable Division

2077 South Building
AMS, USDA
Washington, D.C. 20250

Fruit Branch

2532 South Building
AMS, USDA
Washington, D.C. 20250

Lakeland Marketing Field Office AMS, USDA

P.O. Box 9
302 South Massachusetts
Avenue
Lakeland, Florida 33802

Information and Publications

Colorado peach marketing
order, and annual summaries.

Georgia peach marketing order,
and annual summaries.

"Peach Times," a monthly publi-
cation, and promotional and
educational materials.

California peach marketing
order, and annual summaries.

Pamphlet, "Peaches - Facts and
Pointers."

Washington peach marketing
order, and annual summaries.

Colorado peach marketing
order, and related material.

Federal marketing orders for
specified fruit, vegetable, and
nut crops, and related material.

Marketing orders for specified
fruit crops, including peaches,
and related material.

Georgia peach marketing order,
and related material.

Market News Branch

2503 South Building
AMS, USDA
Washington, D.C. 20250

**Northwest Marketing Field
Office****AMS, USDA**

Boise-Cascade Building – Suite
805
1600 S.W. 4th avenue
Portland, Oregon 97207

**Sacramento Marketing Field
Office****AMS, USDA**

P.O. Box 255507
2424 Arden Way, Suite 65
Sacramento, California 95825

**Economics, Statistics, and
Cooperative Service****Commodity Economics Division**

350 500 12th, S.W.
USDA
Washington, D.C. 20250

Crop Reporting Board

0005 South Building
USDA
Washington, D.C. 20250

Food Safety and Quality Service**Fresh Products Standardization
and Inspection Branch**

2052 South Building
USDA
Washington, D.C. 20250

Foreign Agriculture Service**Foreign Commodity Analysis**

5081 South Building
USDA
Washington, D.C. 20250

Summaries relating to peach shipments and prices from major shipping point and terminal markets.

Washington peach marketing order, and related material.

California peach marketing order, and related material.

“Fruit Situation,” quarterly publication about the production and marketing situation for fruit crops.

“Crop Production,” a monthly publication containing crop forecasts and estimates; and “Noncitrus Fruits & Nuts - Production, Use, Value,” an annual summary.

Copies of U.S. grade standards for peaches, and information on obtaining inspection services.

“Deciduous Fruit, World Production and Trade Statistics,” a periodic report.

Science and Education Administration

Extension

5039 South Building
USDA
Washington, D.C. 20250

Technical information on growing and marketing peaches.

Federal Research

302-A Administration Building
USDA
Washington, D.C. 20250

Research reports on growing, packing, storing, and shipping peaches.

REFERENCES

Childers, Norman F., *The Peach-Varieties, Culture, Pest Control, Storage, Marketing*, Horticultural Publications, Rutgers—The State University, New Brunswick, N.J. 1975.

U.S. Department of Agriculture, Economics, Statistics, and Cooperatives Service, *Fruit Situation*, TFS-203, USDA, Washington, D.C. July 1977.

———, Economics, Statistics, and Cooperatives Service, *Noncitrus Fruit & Nuts, 1977 Annual Summary—Production, Use, and Value*, FrNt 1-3 (78), USDA, Washington, D.C., January 1978.

———, Foreign Agricultural Service, *Deciduous Fruit, World Production and Trade Statistics*, FDAP 2-78, USDA, Washington, D.C., April 1978.

———, Agricultural Research Service, *Peach Production, Agricultural Handbook No. 463*, U.S. Govt. Print. Office, Washington, D.C., September 1974.

———, Agricultural Marketing Service, *United States Standards for Peaches*, USDA, Washington, D.C., June 1952.

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———, Agricultural Marketing Service, *Marketing California Peaches 1976*, Sacramento, California, March 1977.

